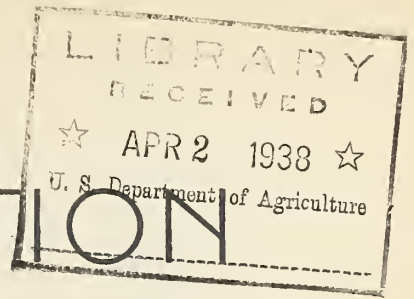


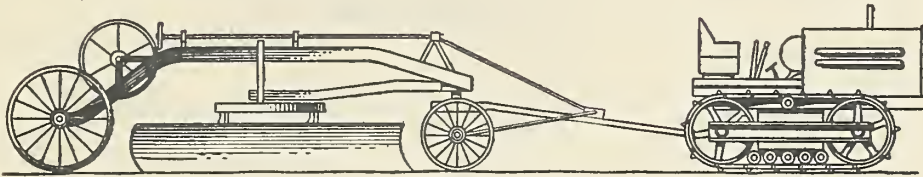
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# CONSTRUCTION



## HINTS

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

WASHINGTON, D. C.

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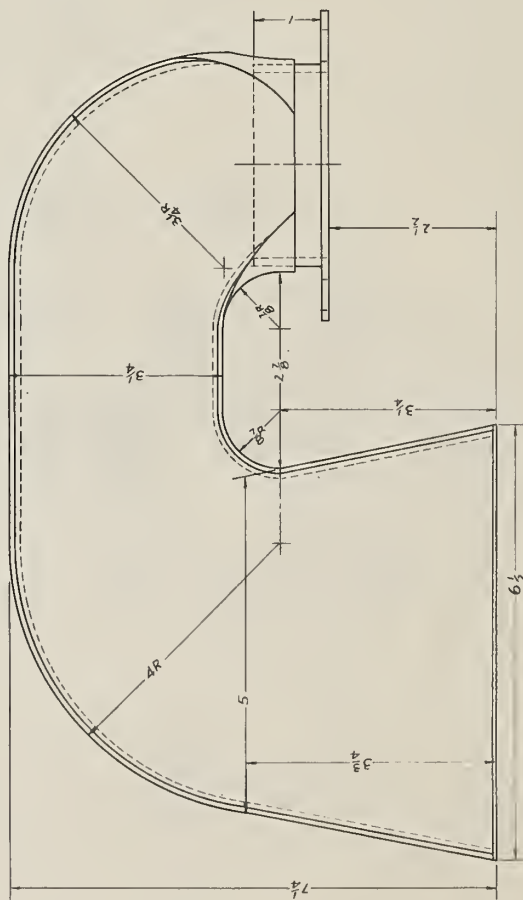
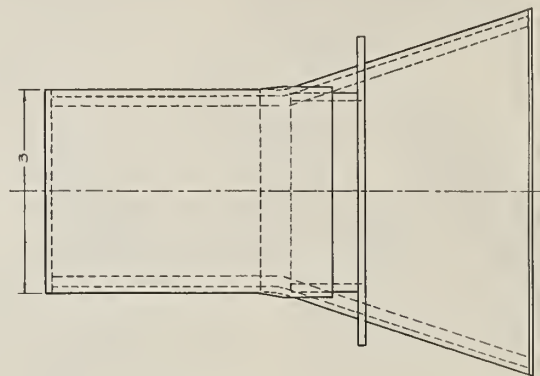
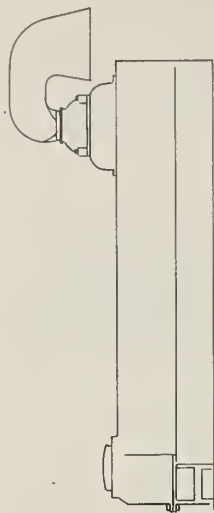
### TRACTOR AIR PIPE AND SCREEN

Submitted by Albert H. Medendorp, Supervising  
Mechanic, Manistee Purchase Unit, Baldwin, Michigan.

The standard equipment air pipes on the McCormick-Deering Tractor Models TA-40 and TD-40 are not the type for furrowing in undergrowth and saplings. The air pipes are often broken by being struck by limbs.

By using the flange and screen from a broken air pipe a good heavy duty air cleaner, such as shown on the attached plan can be constructed by any welder at a small cost. This cleaner, due to its "streamlined" construction, will defy breakage under the worst working conditions.

This air pipe also prevents water from entering the cleaner during wet weather, and any leaves or dust that are sucked to the screen will fall off when the motor is stopped.



*Note:* The flange is cut from a standard air pipe. The offset shown is for McCormick-Deering Model TA-40 and TD-40. For other models, the offset should be determined before welding the flange in place.

*Material:*  $\frac{3}{32}$  sheet iron, all joints welded.

Scale:  $\frac{3}{8}'' = 1''$

U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE REGION 9  
MANISTEE NATIONAL FOREST

# TRACTOR AIR PIPE AND SCREEN

D., SIGNED: A. H. M.  
DRAWN: E. F. R.

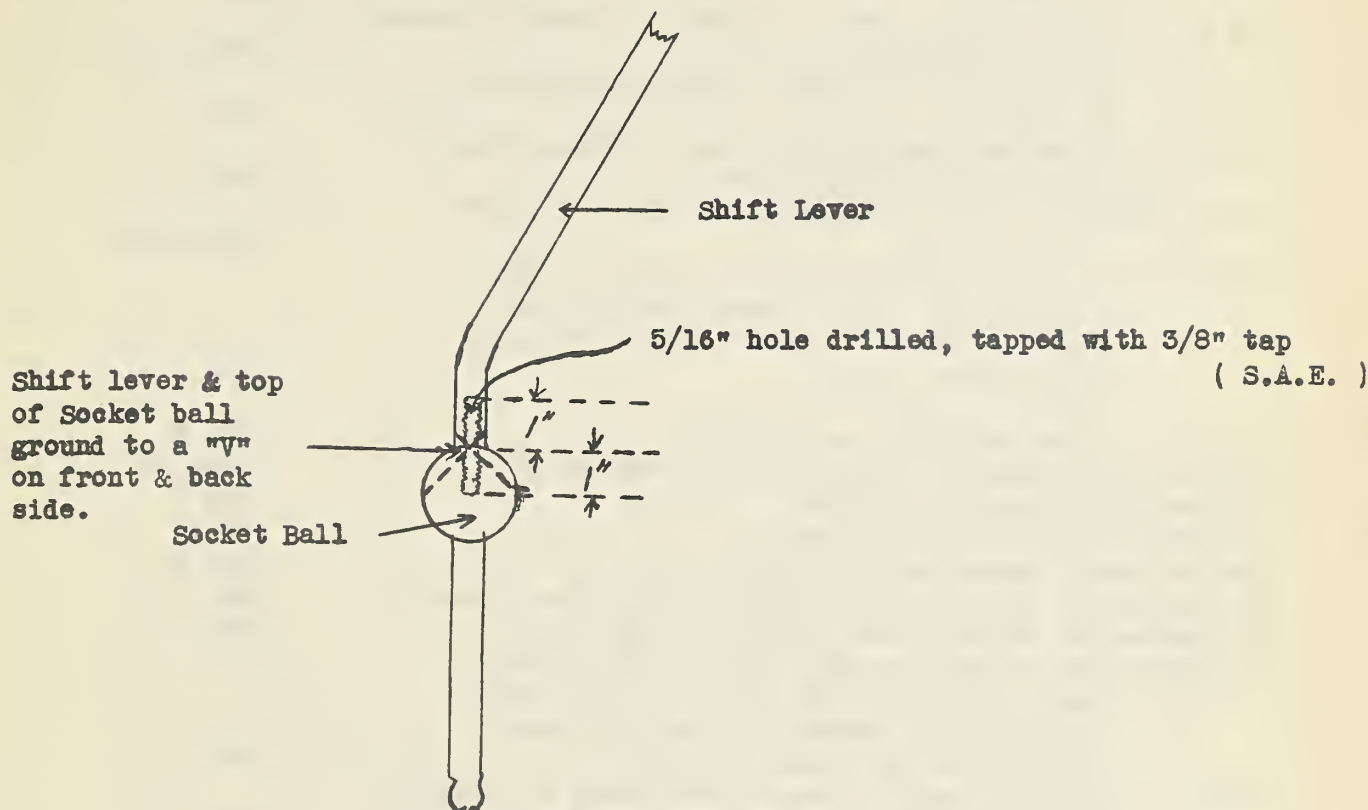
FEB 12, 1938

E  
Construction Hints

REPAIR OF BROKEN SHIFT-LEVER

FOR

1936 Dodge Dump Truck  
Model LH45



The Shift lever ordinarily breaks in the butt-weld immediately above the socket ball. The above sketch shows a method of repairing this break, which has proven successful in actual operation. A 3/8" X 1 1/2" steelbolt with SAE threads ( to conserve strength of shift lever ) is screwed into the shift lever and the socket ball and the two tightened to their normal position. The two are then brazed in the ground "V" and shaped to their original size and shape.

Designed by:

H. G. Houlding  
Camp Walhalla F - 23  
Manistee National Forest  
Feb. 15, 1938

## GRINDSTONE

Submitted by  
E. J. Yost  
Pierce Ranger Station  
Pierce, Idaho

24" x 3 $\frac{1}{2}$ " Grindstone, with suitable hole for arbor to be furnished	Ea. 1
3/4 H.P. Single Phase, 110V, 1200 RPM, 60 Cycle, Electric Motor with base.	Ea. 1
3" P.D. 2-groove V belt pulley fitted to motor, for #A belts	Ea. 1
18" P.D. 2- groove V Belt pulley, for A belts. Bore 1" key-seat and set screw	Ea. 1
1" C.R. shafting, K.S. both ends. 2" long - fit 18" pulley one end	Inch 24 $\frac{1}{2}$
12T 3/4" P. roller chain sprocket. Bore 1" - Hub one side 1 $\frac{1}{4}$ " high. Keyseat and fit to opposite end of 1" shaft. Hubs of pulley and sprocket inside	Ea. 1
V Belts, corresponding to Gates #75-A	Ea. 2
3/4" P. Roller chain. American Manufacturers #60 H	Inch 69
1" Babbitted common flat boxes	Ea. 2
1-3/16" Babbitted Common Flat Boxes	Ea. 2
1-3/16" Steel safety set collars	Ea. 2
#2 Compression Grease Cups, Fit to 1-3/16" Flat Boxes	Ea. 2
#1 Compression Grease Cups, Fit to 1" Flat Boxes	Eac.2
Grindstone Arbor, 22 $\frac{1}{2}$ " overall length, with 1-3/16" Shaft and collars 8" dia. for stone 3 $\frac{1}{2}$ " thick, set on shaft so stone will mount 10" from end to center of stone	Ea. 1
1/2" M.S. Rods 21" long, threaded both ends, 2", with 2 hex. nuts and 2 cut washers for each	Ea. 5
M.S. 1/2" Rods 45 $\frac{1}{2}$ " long, threaded 2 $\frac{1}{2}$ " on both ends with 2 hex. nuts and 2 cut washers for each	Ea. 4
7/16" x 4 $\frac{1}{2}$ " Machine bolts with washers	Ea. 4
3/8" x 4 $\frac{1}{2}$ " Machine bolts with washers	Ea. 4
7/16" x 5" Machine bolts with washers	Ea. 4.
Pulley and belt guard for above pulleys - made for 19" centers and additional 1" for tightening of belt	Ea. 1
Chain and sprocket guard for above sprockets on 23" centers. Both guards open on one side.	Ea. 1



Belts corresponding to  
Gates #75A

# RULE ON WHEN TO STOP REPAIRING EQUIPMENT

Example: Shovel costs \$6000

Hours used :	Repairs :	Per Hour :	Depreciation :	plus repairs :
Cumulative :	Total :	Per Hour :	ciation:	repairs :
1,800	\$ 270	\$0.15	\$ 3.33	\$ 3.48 per hr.
	1,600 (overhaul at 1800 hrs.)			
	500			
4,000	2,370	0.59	1.50	2.09 " "
	2,300 (overhaul at 4000 hrs.)			
	750			
5,700	5,420	0.95	1.05	2.00 " "
	1,700 (estimated overhaul at 5,700 hours)			
	600			
6,700	7,720	1.15	0.90	2.05 " "

The cost record is shown by periods of major overhaul. At any time such as at 4,000 hours, an estimate of the overhaul cost, additional use before another overhaul, and the minor repairs required during the period of additional use can be made, and the depreciation-plus-repair cost figured for estimated end of the next period, i.e., 5,700 hours. Figures would later be adjusted to the actual amounts used and estimate again made for the next period. In the example given, the depreciation-plus-repair cost begins to increase after 5,700 hours, indicating a new machine should be purchased and the old one condemned.

Other costs (operation, cost of lost time) could be included if they affect the decision.

It is recognized that actual repair costs on past use are not always available and that the rule disregards obsolescence and loss of efficiency due to age.